**Cooperative Automated Transportation Coalition**

**Technical Resources Working Group**

**Quarterly Meeting Summary**

**Wednesday August 14, 2019 11:00 am - 12:30 pm Eastern Time**

## Action Items

1. Everyone: Share leads, links, or attachments of resources with Faisal or Jeremy on:
   * Suggestions from WG members on ways to enhance impact, including: 1) proposed new WG Members, 2) communications with/Involvement in other initiatives, and 3) knowledge resources to include on the CAT Coalition Website.
   * SPaT deployment, related to the full V diagram, e.g. ConOps, Reqs, Test Plans, Procurement or bid documents with scope, specifications, or SOW for equipment, installation, support contractors, cost information, general technical support resources, security details, project plans, network plans, or lessons learned.
   * OBU deployment documents that may assist deployers in the Connected Fleet Challenge.
   * Cybersecurity and network security resources.
   * Information on new or planned SPaT deployments, or updates for the SPaT website.
2. Everyone: contact Faisal or Jeremy if you are interested in participating in the ITE effort to “standardize” RSUs and SPaT/MAP.
3. Jim to provide links to C-V2X resources when they are available, which Jeremy will distribute to the working group members.
4. Jeremy will share a link to the USDOT “MAP and SPaT Planning and Implementation Considerations” document with working group members when it is available.

## Meeting Summary

**Ongoing Commitment to Outreach and Knowledge Transfer**

Tom Kern presented an update on the CAT Coalition accomplishments and direction for the coming year. Specifically, he commented on the need to interface with other organizations in order to gather and exchange resources, and also increase participation and collaboration. Suggestions from WG members on ways to enhance impact should be emailed to Faisal or Jeremy, including: 1) proposed new WG Members, 2) communications with/Involvement in other initiatives, and 3) knowledge resources to include on the CAT Coalition Website.

**Resources WG Recap, CAT Coalition Update, and Partner Updates**

Jeremy provided a brief recap of the previous Resources WG webinar in May and updates on resources being developed by CAT Coalition working groups. Of particular interest:

* Resources developed by the CAT Coalition are now available on a single website: <https://transportationops.org/CATCoalition/resources>
* The IOO/OEM Forum has posted the RSZW-LC Infrastructure System ConOps at: <https://transportationops.org/sites/transops/files/RSZW-LC%20Model%20ConOps%2005072019%20Ver%202.2.pdf>
* Regarding SPaT Challenge Resources, USDOT will soon be posting a V2I Hub document on “MAP and SPaT Planning and Implementation Considerations”. Jeremy will share a link to this document with the working group members when it is available.

Siva reported that ITE had a successful conference with the MaaS and MOD communities coming together with the CAV community to learn about possible impacts. This collaboration has been positive. Additionally, ITE has been asked to provide a proposal to standardize RSUs and SPaT/MAP by creating a pan-national hub of information. Please let Faisal or Jeremy know if you are interested in participating in this effort.

**CV Deployment Environment Discussion**

Jeremy presented an update of this effort to develop a resource for agencies considering a CV deployment to comprehensively understand the bigger picture of considerations, upgrades, and technologies needed to have a fully operational CV environment. He presented the overall diagram and the general outline structure to provide a telescopic view into the individual systems in order to first provide a description of that system and the components, before providing a list of considerations in a brief fashion with links to other resources or standards, as applicable.

Faisal requested volunteers, specifically from agencies with deployment experience, to help populate the document. Emil Wolanin, Jianming Ma, and Peter Jager all agreed to volunteer to help advance this resource. Israel Lopez and Alan Clelland agreed to provide support from the private sector.

Bob Rausch reiterated the need for this document to support sustainable, interoperable CV deployments from the perspective of an IOO who is or wants to begin a deployment in order to have an idea of the overall picture. Siva noted this resource will help an agency connect the concept to procurement. He added that this resource is intended to reach the next level of agencies, which represent a majority of members behind the advanced deployers, and thus to get wide-ranging deployment.

A comment was made about the need for agencies to change their approach for technology-driven deployments when technology is developing more rapidly than the traditional systems engineering process; USDOT released recommendations about when to use an agile approach.

**C-V2X Overview**

Jim Misener and Alan Clelland provided an overview C-V2X, including the current status and availability. Jim noted an advantage of C-V2X is that vulnerable road users will use the same communications technology with their mobile device as vehicles, and that vehicles already have cellular capabilities. C-V2X includes a network component (C-V2N) as well as the direct vehicle to vehicle (C-V2V) and vehicle to infrastructure (C-V2I) components. Jim said there is a waiver for C-V2X to use 20 MHz of the spectrum now, with a request to use an additional 40 MHz for the direct communications in a way that is consistent with USDOT policy to preserve the spectrum for safety applications.

Examples of current C-V2X deployments include Colorado DOT, which has deployed dual mode RSUs, and a C-V2X deployment on New York Avenue in Washington, DC that was deployed in conjunction with ITS America.

An announcement from Ford about equipping all 2022 vehicles with C-V2X capabilities given a favorable policy environment. Also C-V2N also has some deployment examples.

C-V2X resources should be available by the beginning of September. A link to those resources will be shared with working group members when it is available.

An observation following the presentation was that DSRC is a vehicle-centered safety technology, while cellular expands beyond vehicle and infrastructure communications to vulnerable road users and broader community. A follow-on question for the group to address is whether DSRC has a plan to reach those other users and broader network, and if not does it miss the broader ecosystem? Ed Fok noted the importance of considering the readiness and current state of all available technologies, including both DSRC and C-V2X communications. The ability to locate vehicles, peds, or anything is the critical piece for any deployment, regardless of the technology. Navin commented that the current accuracy of GPS in cellular phones is slowly improving and being addressed. Alan added that these issues are not completely resolved with C-V2X but they can be accommodated in geofencing if you are aware of them.

There are products available that provide C-V2X integrated with RSU offerings. The resources coming available within this month will allow an agency to identify the RSU specification modifications that need to be made.

**Upcoming Webinar & Close**Resources Working Group meetings in 2019 will be held on November 13 at 11am ET.

## Attendance

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| --- | --- | --- |
| 1. | Faisal Saleem (Chair) | faisal.saleem@maricopa.gov |
| 2. | Navin Katta (Co-chair) | navin@savari.net |
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